Undersea Technology—Index Volume 6, 1965

This is a three-part instant-reference index of technical material and news appearing in Volume 6, 1965. Part 1, Monthly Contents (below); Part 2, Authors (below); Part 3, Subject Index (Page 44). Numbers following title, author or subject are month and page number.

PART 1 — MONTHLY CONTENTS

January 1965

Title	Page
The Team Needs A Captain	4
Capitol Report	8
International	11
Navy Currents	12
A Brighter 1965 For The Sea And All Around It	14
Titanium For Deep Submergence Vehicles	26
Manned Submersible Inspects Underwater Cable	30
Oceanographic Ships Around The World	35
Mk. 46 Mod. O Lightweight Torpedo In Production	50
Product Development	53

February 1965

Developing The Science of Ocean Exploration	4
Research	9
Capitol Report	10
Navy Currents	11
Neuristor Imitates Nerve Cell	12
State-of-the-Art In Torpedo Propulsion	14
Design For A Free Fall Instrument Package	18
A Production Cycle For ASW Equipment	23
Filament Wound Housing For Deep Sea Research Equipment	26
IPFC (Indo-Pacific Fisheries Council) Holds 11th Meeting	29

March 1965

Industry's Opportunity To Support Oceanographic Legislation	4
Capitol Report	11
Navy Currents	12
Man-In-The Sea Projects Will Go Deeper, Stay Longer	15
Man-In-The-Sea Commerical Operation Is Aim of New Company	20
Substantial Increases Mark Most Ocean Oriented Budget Requests	24
Engineering For Marine Exploration	29
The Pinger As A Deep-Water Grab Control	36
Program — 3rd National ISA Marine Sciences Instrumentation Symposium, April 21-23.	38
Acoustic Absorption Coefficient Nomogram	42
Product Development	46

April 1965

Oceanographic Instrumentation Needs Coordination	4
Statement by Lyndon B. Johnson, President of U.S. on Oceanography	7
Navy Currents	10
Research	12
Capitol Report	15
Lykes System Reduces Turnaround Time	18
Oceanographic Instrumentation Heads For Major Expansion	20
Personnel Research Helps Navy Man Weapon Systems	34
Ice Island Arlis II Nears End of Four Year "Cruise"	41
Submersible Seaplane Study Completed	43

May 1965

Inventory and Audit	9
Capitol Report	15
Navy Currents	19
International	22
Boston Sea Rovers 11th Annual Diving Clinic Attracts 1,150	24
Sensor Array For ThresherSearch	31
Industry Witnesses More Outspoken At Senate Oceanography Hearings	34
Russian Fisheries Make Money and Serve Military	39
Program — Ocean Science and Ocean Engineering Conference and Exhibit, June 14-17.	40
Improved Towline Design For Oceanography	57
Product Development	65

June 1965

Is 'Profit' a Dirty Word?	4
Research	10
Capitol Report	13
Navy Currents	14
Dual Mask Prevents Divers' Jaw Ailments, Side Effects	15
Synthetic Rope Use Gains in Buoy Systems: Wire Aids Moorings	17
Edgerton, Germeshausen & Grier, Inc., company profile	23
Thin Film Circuits For Deep Ocean Application	31

July 1965

The Runway Sea Horse	7
Navy Currents	14
International	17
Capitol Report	18
Technical Meetings Draw Record Attendance	20
Underseaplane Improves Diver's Mobility	37
Navy's AUTEC Approaches Operational Status	38
Product Development	47

August 1965

Crisis Versus The Economy	5
Navy Currents	13
Research	15
Capitol Report	16
SeaLAB II	17
Year-Long Gulf Stream Study Gets Underway	18
Standardizing Oceanographic Instrumentation Is Practical	22
Seamounts Will Act As Platforms	22
R. E. Darling Co. Reapplies Rubber Technology	25
Submarines Guided by TV Display	28
Marine Technology Society Expands '66 Programs	30

September 1965

The Waves Of The Future	7
Capitol Report	12
Navy Currents	17
International	19
Alvin Reaches 6,000 Feet In Dive	20
Shipboard Electronics For Oceanograhy and Marine Science	24
Geological Survey's Marine Program	35
Pressure Insensitive Components	39
Navy Begins Deep-Ocean Engineering	40
Fuel Cells For An Underwater Research Vehicle	45
Sonic Underwater Long Range Aid to Navigation	47
Product Development	53

October 1965

Astronaut Recovery Versus ASW Readiness	6
Capitol Report	13
Navy Currents	14
Research	17
Carpenter Stays Down 30 Days	18
Divers Stay 48 Hours at 650 Foot Simulated Depth In Chamber	21
Deck Handling Equipment and Electrical Systems	24
From Underground to Undersea — Joy Mfg. Co. profile	35
International Oceanographic Organizations	38
Oceanographic Data Readout	41
Product Development	49

November 1965

The Sea Horse: Off And Swimming	6
Capitol Report	11
Navy Currents	13
International	14
Mountain Dam Is Site Of Deep "Sea" Diving	17
Navy — Cousteau Finish Projects: Man-In-Sea Symposium Coming	21
Shipboard Computers And Data Processing Equipment	22
Compact, Diversified and Loaded With Talent — That's Woods Hole	35
Buoy-Pak Raises Sunken Vessel	41
65 Nations Show Massive Interest in Desalination	42
Product Development	49

December 1965

The Human Factor	6
Capitol Report	15
Navy Currents	19
Research	21
"Man's Extension Into The Sea" Symposium	23
Shipboard Laboratories	24
NOL Hydroballistic Laboratory Nears Completion	32
45 Days On The Bottom With Navy's SeaLab II	34
Digital System Checks Acoustic Underwater Transducers	39
Undersea Technology, Index, Volume 6, 1965	43

PART 2, AUTHORS

Author	Month/Page
Bandy, Orville L.	3/36
Beaufort, Dr. Roger	1/11, 3/9, 5/23, 7/17, 9/19, 10/38, 11/14

(Continued on page 44)

Oceanographic Know-How in Action

Increasingly critical demands of ASW, oceanographic R & D, marine harvesting / mining, marine structures, and other related aquatic operations today are being met at Marine Advisers with a broad range of problem solving services, analytical techniques and instruments developed here over the last nine years.

Full Spectrum of Capabilities

Successful completion of over 200 contracts has demonstrated numerous capabilities, ranging from initial studies and surveys to installation and operations:

- **SURVEYS** of proposed operating areas
- data **ACQUISITION** of environmental parameters
- systems **HARDWARE** and devices for continued environmental monitoring
- **INSTALLATION** of marine cables, transducers and marine structures
- intelligence **REPORTS** on specific topics and areas
- **DOCUMENTATION** of weapons/instrument tests at sea
- complete **CONSULTATION** and **SERVICE** for coastal and ocean engineering

Our equipment and personnel are prepared to work independently or with your task group anywhere in the world. For complete information without obligation: write, cable, or call Marine Advisers, Inc., P.O. Box 1963A, 7440 Girard Ave., La Jolla, California. Cable MARAD SAN DIEGO.

Circle No. 502 on Inquiry Card

BIW

HYDRO-PROOF

LEAKAGE CABLE

tested to withstand pressures of 2,000 psi on exposed ends and to maintain external watertight integrity at over 10,000 psi.

Provide this "Zero Leakage" protection for all your submersible circuitry. You can start by using BIW's unique system to help you plan and design your own, special purpose, HYDRO PROOF CABLES. Your design tools — BIW Standard component charts, test reports, construction details and other valuable data, all contained in —

BIW Brochure, "HYDRO-PROOF CABLE"

For your copy, contact your nearest BIW Office or ask our engineering department to help with your underwater cable design problems.

BOSTON INSULATED WIRE & CABLE CO. BIW

Main Office and Factory
65 Bay St., Boston, Mass. 02125
265-2104 Telex 094-540
Canadian Factory
118 Shaw St., Hamilton, Ontario, Canada
JAckson 9-7151
California Division/Electronic Accessories
141 Nevada St., El Segundo, Cal.
ORegon 8-6141 Telex 067-398
BIW/INTERNATIONAL
3448 Peel St., Montreal, Quebec, Canada
845-2852 Telex 01-2729

Circle No. 33 on Inquiry Card

Booda, Larry L. 1/12-14, 2/11, 3/12-14, 4/10-15, 5/15-19-34, 6/13-14-17, 7/14-18-30, 8/13-16-25, 9-12-17-21, 12/15-19-34, 10/13-14-18, 11/11-13-35
Bradley, Edward 9/35
Bray, Donald T. 2/18
Busby, Roswell F. 7/38
Butenkoff, G. 9/45
Cawley, John H. 2/18
Corwin, Gilbert 9/35
Covey, Charles W. 1/35, 4/20, 6/23, 7/20, 9/24, 12/24-32-39, 10/24, 11/22,
Dakin, Francis 5/57
Dorr, J. A. 3/42
Feige, Norman 1/26
Goerland, Vil 5/57
Greiner, Leonard 2/14
Halmos, E. E. Jr. 1/8, 2/10, 3/11
Hersey, J. B. 5/57
Jackson, James M. 6/31
Kirkley, John 9/39
Koonce, George R. 8/31
Landis, Arthur T. Jr. 2/9, 4/12, 6/10, 8/15, 10/17
Link, Edwin A. 3/20
Lougham, R. 9/45
McGrath, Capt. Thomas D. (USNR) 2/23
Minkler, Ward M. 1/26
Nussear, George 9/39
Orkand, Dr. D. S. 4/34
Palmer, H. D. 8/22
Rather, R. L. 5/57
Sjoholm, A. A. 4/34
Stephan, RAdm. E. S. (USNR) 3/20
Sullivan, Jere Jr. 2/26
Toggweiler, Mart 1/30
Verber, James L. 8/20
Vine, A. C. 5/57
Wenk, Dr. Edward Jr. 3/29
Witosky, S. 9/47

PART 3, SUBJECT

Subject	Month/Page
acoustic,	
absorption nomogram	3/42
recovery system	1/53
sub detections	11/44
transponder	9/53
underwater	10/44
AGOR vessels,	
computers	11/22
deck gear	10/24
electrical systems	10/27
lab equipment	12/24
navigation	9/32
AGS vessels,	
computers	11/22
deck gear	10/24
lab equipment	12/24
navigation	9/32
ALVIN	9/20
antarctica, rock geology	2/22
ASW — antisubmarine warfare,	
equipment, production	2/23
conference, Navy	7/30
missiles	8/39
mission	6/14
organization	10/14
personnel	5/19
readiness	10/6
research organization	4/35
seamounts	8/22
torpedo	1/50
training simulator	6/29
Vietnam	7/14, 9/17
American Inst. of Aeronautics & Astronautics	7/35
American Society of Mechanical Engrg.	4/42, 7/29
American Society of Photogrammetry	7/31
Arlis II, ice island	4/41
ASWEPS—ASW prediction system	4/24
AUTEC	7/38
BT's—bathythermographs	1/12
boomerang, corer	6/28
bottom sampler, pinger	3/36
buoyant bodies, ceramics	1/53
buoy, frequency transmission	4/31
budget, oceanography 1/4, 1/8, 8/13, 2/7, 3/24, 4/7	
Bureau of Commercial Fisheries vessels,	
data processing	11/22
deck gear	10/32
lab equipment	12/24
navigation systems	9/32
Bureau of Ships, U.S. Navy	2/11
cable, fairing	5/57
Canada	1/11, 5/23, 11/14
CAPRI system	4/34
ceramic materials, buoyant	1/53
chronometer	9/53
Coast & Geodetic Survey vessels,	
computers	11/22
deck gear	10/24
lab equipment	12/24
navigation systems	9/24
winch instrumentation	10/30
Coast Guard, computers	11/33
Colombia	9/19
communication, oceanography	5/9
computers, vessels	11/22
Congress, oceanography 1/4, 1/8, 2/10, 3/4, 3/7, 3/10, 3/13, 10/13, 11/6, 11/11	
connector, pipe, underwater	3/46
connectors, electrical underwater	10/38

(Continued on page 45)

E-X-P-A-N-D

INTO

Baltimore

WHO ARE YOUR CUSTOMERS?

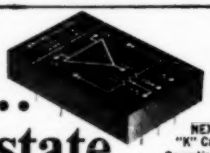
Manufacturers? .....We have 2,152
Wholesalers? .....We have 2,284
Retailers? .....We have 16,000
Service Companies?....We have 7,109
People? .....We have 1,909,880

— Just in the Baltimore area! Want specifics? Contact us in confidence.

Baltimore Dept. of Economic Development
216 E. Lexington St., Baltimore, Md. 21202

Circle No. 34 on Inquiry Card

Now... solid-state d-c operational amplifiers for oceanographic applications



If your oceanographic work is in *measurement, computation or control* . . . NEXUS offers, from stock, solid-state d-c operational amplifiers with designs optimized for:

- **Severe environmental capabilities — high and low pressures, moisture, corrosion, biological growths, vibration and shock, extreme temperatures: —65°C to over 125°C**
- **High open-loop gain**
- **Excellent d-c stability**
- **Commercial or MIL/NASA modules**
- **Proven certified high reliability**
- **High input impedance**
- **Versatility**
- **Low unit cost: from $24.00**

We welcome your inquiries on specific job requirements. Send for complete information package, including application notes, product catalog and prices, today.

NEXUS
RESEARCH LABORATORY, INC.
480 NEPONSET STREET, CANTON, MASS. 02021
TEL. (617) 828-9000 TWX (617) 828-1022

Circle No. 35 on Inquiry Card

Subject	Month/Page
Conshelf II	3/15
construction, deep-ocean	9/41
core, sample	3/43, 5/28
corers	6/28, 2/22, 5/65
corrosion, deep-sea materials	9/40, 10/9
current meter	3/46, 7/47
data processing, vessels	11/22, 12/24
Decca system	9/30
deck gear, vessels	10/24
deep submergence,	
application	11/17
life support	3/15, 3/20, 12/34
SeaLab II	10/18, 11/21, 12/34
simulation	10/21
deep submergence bodies, filament wound	2/26
defense, oceanography	1/14
Delrac system	9/28
Denmark	7/17
desalination	1/14, 10/9, 11/9, 11/42
digital computers, vessels	11/27
digital instrumentation	10/41, 12/39
diving,	
breathing device	6/15
lake operations	11/17
SeaLab II	10/18, 11/21, 12/34
simulation	10/21
technical meeting	5/24
diving operation	11/17
DOD—Dept. of Defense—ASW	10/9, 10/14
drag coefficient, towed cable	5/57
earthquakes, Alaska '64	2/9
Ecuador	7/17
electrical systems, vessels	10/24
electronic circuits, deep-sea	6/31, 9/39
engineering, deep ocean	9/41, 3/29, 5/9
Environmental Science Services Admin.	11/9
exhibit, Marine Technology Society	5/40
expendable, instrumentation	4/26
exploration, oceans	2/4
fairing, towline	5/57
federal budget, oceanography	3/29, 4/29, 3/34, 4/7
federal policy, oceanography	5/35
filament wound, submersibles	2/26, 5/28
films, listing	11/41
Finland	3/9
fisheries,	
IPFC—Indo-Pacific Fisheries Council	2/29
oceanography	1/14, 5/39, 6/4
resources survey	3/11
Peru	2/28
flow meter, currents	7/47
France	1/11, 3/9, 5/23, 7/17
free fall,	
corer	2/22
instrument package	2/18
frequency, buoy transmission	4/31
fuel cells, submersibles	9/45
geological survey	9/35
geology, marine	2/22, 8/13
Germany	3/9, 11/14
government, oceanography	3/29, 4/7, 4/9, 4/15, 10/13, 5/34
grab control, pinger	3/36
Great Britain	1/11, 7/17, 9/19, 11/14
guidance, submarine	8/28
Gulf Stream, survey	8/18
ice island Arlis II	4/41
ICO	4/29
industry, oceanography	6/4, 7/7
information retrieval	3/11
Institute of Electrical & Electronics Engineers	7/32
Institute of Navigation	7/32
instrumentation,	
current meter	3/46
oceanography	2/4, 4/20
policy	4/4
pressure	5/26
standardization	8/20
symposium, Instrument Society of America	3/38
winches	10/30
instrument package, free sinking	2/18
Instrument Society of America	3/38, 7/33
internal waves	4/12
international oceanographic organization	10/38
Israel	11/14
Italy	3/9, 9/19
Japan	1/11, 5/23, 7/17, 11/14
Korea	7/17
laboratories, vessels	12/24
laser, geodetic measurement	2/13
law, offshore exploitation	6/30
legislation, oceanography,	1/4, 1/8, 2/10, 3/4, 3/7, 3/10, 3/12, 4/15, 5/9, 5/15, 5/34, 6/4, 6/13, 7/7, 7/18, 8/5, 8/16, 8/19, 9/7, 9/17, 10/13, 11/6, 11/11
life support,	
application	11/17
equipment	8/25
simulation	10/21
SeaLab II	10/18, 12/34
undersea	3/15, 3/20
listings, international oceanographic organization	10/38
Lorac system	9/27, 9/31
Malta	9/19
man-in-the-sea	10/18, 10/21, 11/17, 12/34
man, undersea	3/15, 3/20
marine biology	5/24
marine exploration, engineering	3/29, 4/15
Marine Technology Society	3/37, 5/40, 7/20, 8/30

(Continued on page 46)

redar

. . . offers elastomeric prototypes to meet your custom underwater requirements

A recognized leader in elastomeric technology in outer space, REDAR has developed a unique capability in serving those interested in inner space. REDAR's design techniques can assist you in developing prototypes or in solving advanced technical problems. We will fabricate precision-molded components of any size, shape and elastomeric material to your specs — in single units to production quantities.
Other areas of REDAR experience include

- ☐ Life Support
- ☐ Reinforced Plastics
- ☐ Shipboard Flexible Ducting

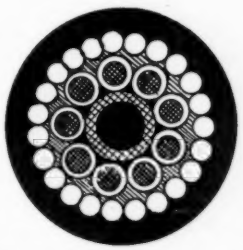
Let REDAR's customer capability assist you in your planning stage. Our qualified field representatives provide continuing quick-reaction service from —

R. E. DARLING CO., INC.

☐ 16021 Industrial Dr., Gaithersburg, Md. (301) 948-5920
☐ 3749 N. Romero Rd., Tucson, Ariz. (602) 887-2400

* Research, Engineering, Development And Reproduction

Circle No. 36 on Inquiry Card



LOOKING FOR A SPECIAL UNDER-WATER CABLE?

Need a hydraulic hose in your cable? Maybe a strain member, or some low-capacitance shielded pairs plus a high voltage signal and some coaxes? Maybe you need complete assemblies, branched — with molded terminations or connectors? Chances are that South Bay Cable Corp. can produce a cable FAST to do your job. Blocked —non-hosing or unblocked, armored or plain, let us know what you need and how much (even a little) and we'll have a quote and delivery to you by return air mail.

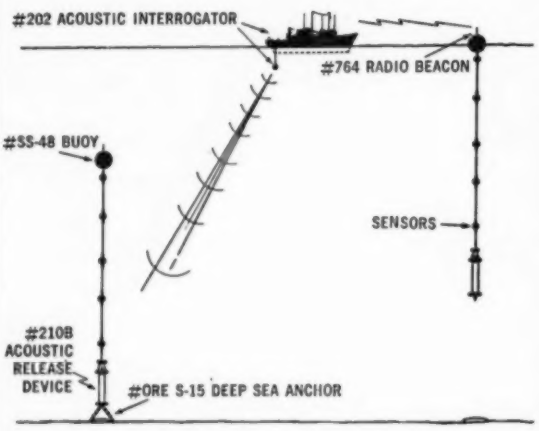
SOUTH BAY CABLE CORP.

WRITE BOX 260, GARDENA, CALIF. Phone 213-FA 1-1956

Circle No. 37 on Inquiry Card

recoverable subsurface mooring system

Eliminates the major disadvantages of the conventional surface buoy mooring. Wave or wind forces which typically cause loss of buoy and induce motion in the mooring are minimized. With O.R.E. acoustic release device, mooring and instrument string can be recalled to the surface on command, and located by means of a radio beacon.



Ocean Research Equipment INC.
Falmouth, Massachusetts (617) 548-5800

Circle No. 38 on Inquiry Card

OCEANOGRAPHER

$16,000 to $20,000

Position requires an individual with substantial experience in Physical Oceanography. The principal objective will be providing specialized support to a variety of research and development programs and project management programs in the field of Marine Technology. Typically these might involve summaries of water current conditions in specific areas or system analysis involving variations of oceanographic and meteorological parameters to determine acoustic performance, installation requirements, etc. Our client is not an electronics firm. Boston area location.

If you are interested in exploring this opportunity, please contact:

R. H. Starrett

Starrett Associates, Inc.

~ management consultants ~

594 Marrett Rd. (617) 862-8622 Lexington, Mass.

Circle No. 503 on Inquiry Card

Subject	Month/Page
mask, skin diving	6/15
measurement, instrumentation	4/20
medicine, marine	5/24
medicine, underwater	5/24
merchant ship, design	4/18
metals, deep-sea vehicles	1/26
Mexico	11/14
microelectronics	2/12, 6/31, 9/39
military oceanography	7/26
minerals, off-shore	1/14
mining, undersea	10/44
Mohole	3/37, 11/40
Monaco	9/19
National Science Foundation	7/9
National Security Industrial Assoc.	11/9
National Security Industrial Assoc.	6/28, 11/9
National Telemetering Conference	7/43
navigation	9/24, 9/47
Netherlands	1/11
neuristor, nerve duplicator	2/12
New Caledonia	3/9
New Zealand	9/19
nomogram, acoustic absorption	3/42
nuclear power, Navy	2/11
ocean, science and engineering conference	5/40
Omega system	9/28
offshore drilling	10/46
offshore drilling, submersibles	7/49
offshore, exploitation law	6/30
oxygen meter, in situ	1/53
oxygen, sensors	4/22
package, filament wound	3/26
Pegasus, underwater powered vehicle	7/37
personnel, weapons research	4/34
Peru	1/11, 2/28, 3/9, 5/23, 9/19
photo equipment, Thresher search	5/31
photography, underwater	5/24
physiology, deep-diving	10/18, 10/21, 11/17
pinger, grab control	3/26
pipe connectors, underwater	3/46
Poland	3/9, 11/14
policy, oceanography	3/24, 3/29, 4/4, 4/7 4/9 4/15, 5/9, 5/34
pollution	1/13, 3/11, 4/12, 5/15
Portugal	5/23
positioning systems	9/24
pressure, high, deep-sea	6/31
production, ASW equipment	2/23
profile,	
R. E. Darling Co.	8/25
Edgerton, Germeshausen & Grier	6/23
Joy Manufacturing Co.	10/38
Woods Hole Oceanographic Institution	11/35
profits, fisheries	6/4
program,	
ISA Marine Sciences Symposium	3/28
Marine Technology Society Conference	5/40
propulsion, torpedo	2/14
propulsion unit, Pegasus	7/37
Raydist system	9/29
recording equipment, vessels	11/22, 12/
recreation, ocean	1/14
regulations, R/V crews	10/42
research, personnel	4/34
research vessel, charter	3/41
rope, synthetic	6/17
salt water distillation	3/37
satellite navigation	9/24
Scripps Institution of Oceanography	9/33, 10/33, 11/34
seals, rubber to metal	5/65
sea grant colleges	7/18
Sea Horse Institute	7/28
seamounts	8/22
seaplane, submersible	4/43
SeaLab II	2/11, 3/15, 7/49, 8/17, 10/18, 11/13, 11/21, 12/34
semiconductors, neuristor	2/12
sensors,	
Instrumentation	3/38, 4/20, 4/26
Thresher, search	5/31
sewage,	
disposal	1/14
treatment	2/9
shipboard survey system	4/24, 11/27
ships,	
cargo, design	4/18
oceanographic, listing	1/35
support equipment	9/24, 10/24, 11/22, 12/24
ships of opportunity	4/22
Shoran system	9/33
shoreline, U.S. East coast	2/9
simulation, deep dive	10/21
sink, free fall instrument package	2/18
skin diving, face mask	6/15
Society of Aerospace Material & Process Engineers	8/31
sonic navigation	9/47
standardization, instrumentation	8/20
Submaray, submersible	1/30
submarine,	
guidance	8/28
simulator	6/29
submersibles,	
Alvin	9/20
application	1/30
filament wound	5/28
fuel cells	9/45
Lear-Siegler	2/28
life support	10/18, 10/21, 11/17, 12/34
seaplane	4/43
survey,	
general	8/13, 8/32
geological	9/35
Gulf Stream	8/18
Switzerland	3/9
synthetic rope	6/17
Tanzania (East Africa)	3/9
tape recorder	5/65
technical meetings, oceanography	7/20
telemetering,	
digital	10/41, 12/39
net depth	10/49
TENOC	1/12
tensiometer, winches	10/30
testing, underwater, weapons	12/32, 12/39
Thresher search	5/31
thin film circuits, deep-sea	6/31
titanium, deep-sea vehicles	1/26
torpedo,	
procurement	1/12
production	2/14, 3/43, 6/14, 12/39
propulsion	2/14
towed cable, fairing	5/57
transducer, acoustic	12/39
transponder, acoustic	9/53
transportation, ocean	1/14
Turkey	3/9
underwater,	
navigation, sonic	9/47
test range, AUTEC	7/38
voice system	3/46
Ukraine	1/11
U.S.S.R.	1/11, 3/9, 5/23, 7/17, 9/19, 11/14
vehicles,	
deep-sea, materials	1/26
Pegasus	7/37
vessels,	
cargo, design	4/18
crew regulations	10/42
oceanographic, listing	1/35
vibrating wire, transducer	5/26
VLF, navigation	9/25
voice system, underwater	3/46
weapons, research, testing	4/34, 12/32, 12/39
weather, sea-air interaction	1/14
winches	10/24, 10/30
Woods Hole Oceanographic Institution	2/28, 9/32, 11/29, 11/35